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**ABSTRACT BOOK**

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## HEPARIN-PROPELLED TOPICAL DICLOFENAC: REACHING NEW HEIGHTS

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**Background and aims:** This case report highlights the role of technology in improving topical administration.

Topical NSAIDs for knee or hand osteoarthritis has been supported by published evidence, but are they effective for deeper anatomical structures?

**Methods:** A 82-years old woman complained of a right shoulder pain flare up with arm irradiation (Numeric Rating Scale, NRS, 6/10, incident pain 8/10): her PainDetect (PDq) score was 12/38 with ongoing pain and frequent incident pain.

Her comorbidities included atrial fibrillation under anticoagulation, ischemic cardiomyopathy, chronic kidney disease.

Physical examination showed moderate swelling, reduced range of motion, significant mechanical dynamic and static allodynia, thermal allodynia and punctate hyperalgesia.

Ultrasound scan revealed a full-thickness supraspinatus muscle tear and diffuse tendinopathy.

Thermography displayed an increase of skin temperature localized at right shoulder confirming the inflammatory nature of pain (Figure 1).

Different topical NSAIDs failed to improve her pain until it was prescribed a diclofenac epolamide patch with a hydrogel matrix containing heparin (DP+H).

**Results:** After two months of therapy with DP+H, micronized palmitoylethanolamide and tramadol+paracetamol as rescue analgesia the follow-up thermography findings reversed (Figure 2), PDq decreased to 3/38 with only mild incident pain (NRS 3/10) and the patient started physical therapy.

**Conclusion:** The addition of heparin to the matrix increased the delivery of diclofenac through electrostatic repulsion<sup>2</sup>. This technology allowed us to treat inflammatory shoulder pain without oral NSAIDs, thus reducing the systemic burden of medication in a fragile patient.

Figure 1: Pre-treatment thermography

Figure 2: Post treatment thermography

### References:

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2. Rainsford KD, Roberts MS, Nencioni A, et al. Rationale and evidence for the incorporation of heparin to the diclofenac epolamine medicated plaster. Curr Med Res Opin November 2018;1-28.